

## Karst Area



### Tags

Karst, Caves, Carbonates,  
Gypsum

#### Identification\_Information:

##### Citation:

##### Citation\_Information:

Originator: B.D. Tobin

Originator: D.J. Weary

Publication\_Date: 200506

Title: Engineering Aspects of Karst

Geospatial\_Data\_Presentation\_Form: Vector digital data

##### Publication\_Information:

Publication\_Place: Reston, VA

Publisher: National Atlas of the United States

Online\_Linkage: <<http://nationalatlas.gov/atlasftp.html>>

#### Description:

##### Abstract:

These data are a digital version of U.S. Geological Survey Open File Report 2004-1352, Engineering Aspects of Karst. The open-file report is a map with accompanying explanatory text that shows areas containing distinctive surficial and subterranean features developed by solution of carbonate and other rocks and characterized by closed depressions, sinking streams, and cavern openings. These areas are commonly referred to as karst. Included on the map are areas of "features analogous to karst" also called pseudokarst, which is karst-like terrain produced by processes other than the dissolution of rocks. Also included are lines indicating areas in which extensive historical subsidence has occurred.

When used in its broadest sense, the term karst encompasses many surface and subsurface conditions that give rise to problems in engineering geology. Most of these problems pertain to subterranean features that affect foundations, tunnels, reservoir tightness, and diversion of surface drainage. Subterranean openings may be the habitat of unique and, in some cases, endangered fauna.

##### Purpose:

These data are intended for geographic display and analysis at the national level, and for large regional areas. The data should be displayed and analyzed at scales appropriate for 1:7,500,000-scale data. No responsibility is assumed by the U.S. Geological Survey in the use of these data.

##### Supplemental\_Information:

The data set for Engineering Aspects of Karst consists of two map layers.

The map layer karst0p075 contains information on karst regions. The map layer karst0l075 contains information on the extent of areas of subsidence. The map layers are distributed and should be used together.

These map layers are intended to provide users with a national scale karst data coverage to use for graphic and demonstration purposes until a new, improved map layer is developed. These data are not intended for and should not be used for site-specific research.

Time\_Period\_of\_Content:

Time\_Period\_Information:

Single\_Date/Time:

Calendar\_Date: 1984

Currentness\_Reference: Publication date of source material

Status:

Progress: Complete

Maintenance\_and\_Update\_Frequency: None planned

Spatial\_Domain:

Bounding\_Coordinates:

West\_Bounding\_Coordinate: -171

East\_Bounding\_Coordinate: -67

North\_Bounding\_Coordinate: 70

South\_Bounding\_Coordinate: 19

Keywords:

Theme:

Theme\_Keyword\_Thesaurus: ISO 19115 Topic Category

Theme\_Keyword: Geoscientific information

Theme:

Theme\_Keyword\_Thesaurus: None

Theme\_Keyword: Karst

Theme\_Keyword: Caves

Theme\_Keyword: Carbonates

Theme\_Keyword: Gypsum

Place:

Place\_Keyword\_Thesaurus: None

Place\_Keyword: United States

Place\_Keyword: USA

Place:

Place\_Keyword\_Thesaurus:

U.S. Department of Commerce, 1995, Countries, Dependencies, Areas of Special Sovereignty, and Their Principal Administrative Divisions (Federal Information Processing Standard 10-4): Washington, DC, National Institute of Standards and Technology.

Place\_Keyword: Alabama

Place\_Keyword: Alaska

Place\_Keyword: Arizona

Place\_Keyword: Arkansas

Place\_Keyword: California

Place\_Keyword: Colorado

Place\_Keyword: Connecticut

Place\_Keyword: Delaware

Place\_Keyword: District of Columbia

Place\_Keyword: Florida

Place\_Keyword: Georgia

Place\_Keyword: Hawaii

Place\_Keyword: Idaho

Place\_Keyword: Illinois

Place\_Keyword: Indiana  
Place\_Keyword: Iowa  
Place\_Keyword: Kansas  
Place\_Keyword: Kentucky  
Place\_Keyword: Louisiana  
Place\_Keyword: Maine  
Place\_Keyword: Maryland  
Place\_Keyword: Massachusetts  
Place\_Keyword: Michigan  
Place\_Keyword: Minnesota  
Place\_Keyword: Mississippi  
Place\_Keyword: Missouri  
Place\_Keyword: Montana  
Place\_Keyword: Nebraska  
Place\_Keyword: Nevada  
Place\_Keyword: New Hampshire  
Place\_Keyword: New Jersey  
Place\_Keyword: New Mexico  
Place\_Keyword: New York  
Place\_Keyword: North Carolina  
Place\_Keyword: North Dakota  
Place\_Keyword: Ohio  
Place\_Keyword: Oklahoma  
Place\_Keyword: Oregon  
Place\_Keyword: Pennsylvania  
Place\_Keyword: Rhode Island  
Place\_Keyword: South Carolina  
Place\_Keyword: South Dakota  
Place\_Keyword: Tennessee  
Place\_Keyword: Texas  
Place\_Keyword: Utah  
Place\_Keyword: Vermont  
Place\_Keyword: Virginia  
Place\_Keyword: Washington  
Place\_Keyword: West Virginia  
Place\_Keyword: Wisconsin  
Place\_Keyword: Wyoming

Access\_Constraints: None

Use\_Constraints:

None. Acknowledgment of the National Atlas of the United States of America and (or) the U.S. Geological Survey would be appreciated in products derived from these data.

Point\_of\_Contact:

Contact\_Information:

Contact\_Person\_Primary:

Contact\_Person: David Weary

Contact\_Organization: U.S. Geological Survey

Contact\_Address:

Address\_Type: Mailing and physical address

Address: 12201 Sunrise Valley Drive

City: Reston

State\_or\_Province: VA

Postal\_Code: 20192

Country: USA

Contact\_Voice\_Telephone: 703-648-6897

Contact\_Electronic\_Mail\_Address: dweary@usgs.gov

Browse\_Graphic:

Browse\_Graphic\_File\_Name:

<[http://pubs.usgs.gov/of/2004/1352/data/USA\\_karst.pdf](http://pubs.usgs.gov/of/2004/1352/data/USA_karst.pdf)>

Browse\_Graphic\_File\_Description:

The U.S. Geological Survey Open File Report 2004-1352, Engineering Aspects of Karst. The open-file report consists of a map with accompanying explanatory text. The file is approximately 9.4 Mb.

Browse\_Graphic\_File\_Type: PDF

Native\_Data\_Set\_Environment:

Microsoft Windows 2000 Version 5.1 (Build 2600) Service Pack 1; ESRI ArcCatalog 8.3.0.800

Data\_Quality\_Information:

Attribute\_Accuracy:

Attribute\_Accuracy\_Report:

All polygon attributes were manually checked for correct values against the original hard copy map.

Logical\_Consistency\_Report:

These data are believed to be logically consistent, though no rigorous formal tests were performed. Polygon coverages were queried to screen for empty or inconsistent values. Line geometry is topologically clean.

Completeness\_Report:

These map layers shows areas of karst and psuedokarst and the extent of historical subsidence in the fifty United States and the District of Columbia.

Positional\_Accuracy:

Horizontal\_Positional\_Accuracy:

Horizontal\_Positional\_Accuracy\_Report:

No tests for horizontal accuracy have been performed on these map layers.

Lineage:

Source\_Information:

Source\_Citation:

Citation\_Information:

Originator: W.E. Davies

Originator: J.H. Simpson,

Originator: G.C. Ohlmacher

Originator: W.E. Kirk

Originator: E.G. Newton

Publication\_Date: 1984

Title: Engineering Aspects of Karst

Geospatial\_Data\_Presentation\_Form: Map

Publication\_Information:

Publication\_Place: Reston, VA

Publisher: U.S. Geological Survey

Source\_Scale\_Denominator: 7,500,000

Type\_of\_Source\_Media: Stable-base material

Source\_Time\_Period\_of\_Content:

Time\_Period\_Information:

Single\_Date/Time:

Calendar\_Date: 1984

Source\_Currentness\_Reference: Publication date

Source\_Citation\_Abbreviation: KARST

Source\_Contribution: Spatial and attribute information

Source\_Information:

Source\_Citation:

Citation\_Information:

Originator: National Atlas of the United States

Publication\_Date: 200206

Title: State Boundaries of the United States

Geospatial\_Data\_Presentation\_Form: Vector digital data

Publication\_Information:

Publication\_Place: Reston, VA

Publisher: National Atlas of the United States

Source\_Scale\_Denominator: 2,000,000

Type\_of\_Source\_Media: Online

Source\_Time\_Period\_of\_Content:

Time\_Period\_Information:

Range\_of\_Dates/Times:

Beginning\_Date: 1972

Ending\_Date: 2002

Source\_Currentness\_Reference: Ground condition

Source\_Citation\_Abbreviation: Atlas-shore

Source\_Contribution: Spatial information

Process\_Step:

Process\_Description:

Stable-base negatives of the map (KARST) were scanned 1:1 with the map scale at 600 dpi. The outlines of the karst polygons and the outlines of the areas of historical subsidence were vectorized and attributed in a GIS. The values of the polygons were queried in GIS software to check for empty or incorrect values and the polygons were checked visually against the original printed map for attribute and positional accuracy. The subsidence lines were checked visually against the original printed map for positional accuracy.

Source\_Used\_Citation\_Abbreviation: KARST

Process\_Date: 2004

Process\_Step:

Process\_Description:

Shorelines in the karst file were checked against the shorelines in the National Atlas State boundaries file. Where the lines did not match, the lines from the karst file were replaced with the lines from the National Atlas file. Bogoslof Island, Alaska was deleted because it is smaller than the size limit applied to the National Atlas data.

Source\_Used\_Citation\_Abbreviation: KARST

Source\_Used\_Citation\_Abbreviation: Atlas-shore

Process\_Date: 2004

Spatial\_Data\_Organization\_Information:

Direct\_Spatial\_Reference\_Method: Vector

Point\_and\_Vector\_Object\_Information:

SDTS\_Terms\_Description:

SDTS\_Point\_and\_Vector\_Object\_Type: GT-polygon composed of chains

Point\_and\_Vector\_Object\_Count: 1464

SDTS\_Terms\_Description:

SDTS\_Point\_and\_Vector\_Object\_Type: String

Point\_and\_Vector\_Object\_Count: 14

Spatial\_Reference\_Information:

Horizontal\_Coordinate\_System\_Definition:

Geographic:

Latitude\_Resolution: 0.000278

Longitude\_Resolution: 0.000278  
Geographic\_Coordinate\_Units: Decimal degrees  
Geodetic\_Model:  
Horizontal\_Datum\_Name: North American Datum of 1983  
Ellipsoid\_Name: GRS1980  
Semi-major\_Axis: 6378137.000000  
Denominator\_of\_Flattening\_Ratio: 298.257222

Entity\_and\_Attribute\_Information:

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label:

Karst polygons (described by karst0p075.dbf)

Entity\_Type\_Definition:

Areas containing distinctive surficial and subterranean features developed by solution of carbonate and other rocks and characterized by closed depressions, sinking streams, and cavern openings.

Entity\_Type\_Definition\_Source: U.S. Geological Survey

Attribute:

Attribute\_Label: Shape

Attribute\_Definition: The representation of the entity in the data.

Attribute\_Definition\_Source: National Atlas of the United States

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: Polygon

Enumerated\_Domain\_Value\_Definition: 2-dimensional element

Enumerated\_Domain\_Value\_Definition\_Source: ESRI GIS software

Attribute:

Attribute\_Label: Area

Attribute\_Definition:

The size of the shape in square coverage units. In the distributed file, coverage units represent square decimal degrees.

Attribute\_Definition\_Source: National Atlas of the United States

Attribute\_Domain\_Values:

Range\_Domain:

Range\_Domain\_Minimum: 0.00000

Range\_Domain\_Maximum: 12.18929

Attribute:

Attribute\_Label: Perimeter

Attribute\_Definition:

The perimeter of the shape in coverage units. In the distributed file, coverage units represent decimal degrees.

Attribute\_Definition\_Source: National Atlas of the United States

Attribute\_Domain\_Values:

Range\_Domain:

Range\_Domain\_Minimum: 0.00533

Range\_Domain\_Maximum: 51.71492

Attribute:

Attribute\_Label: Karst0p075

Attribute\_Definition: Internal feature number.

Attribute\_Definition\_Source: National Atlas of the United States

Attribute\_Domain\_Values:

Range\_Domain:

Range\_Domain\_Minimum: 2

Range\_Domain\_Maximum: 1465

Attribute:

Attribute\_Label: Objectid

Attribute\_Definition: Internal identification number.

Attribute\_Definition\_Source: U.S. Geological Survey

Attribute\_Domain\_Values:

Range\_Domain:

Range\_Domain\_Minimum: 0

Range\_Domain\_Maximum: 1670

Attribute:

Attribute\_Label: K\_type

Attribute\_Definition: The abbreviation of the karst type.

Attribute\_Definition\_Source: U.S. Geological Survey

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: absent\_1

Enumerated\_Domain\_Value\_Definition:

Fissures, tubes, and caves generally absent; where present in small isolated areas, less than 50 ft (15 m) long; less than 50 ft (15 m) vertical extent; in crystalline, highly siliceous, intensely folded carbonate rock.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: absent\_2

Enumerated\_Domain\_Value\_Definition:

Fissures, tubes, and caves generally absent; where present in small isolated areas, less than 50 ft (15 m) long; less than 50 ft (15 m) vertical extent; in moderately to steeply dipping beds of carbonate rock.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: absent\_3

Enumerated\_Domain\_Value\_Definition:

Fissures, tubes, and caves generally absent; where present in small isolated areas, less than 50 ft (15 m) long; less than 50 ft (15 m) vertical extent; in gently dipping to flat-lying beds of carbonate rock.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: long\_1

Enumerated\_Domain\_Value\_Definition:

Fissures, tubes, and caves over 1,000 ft (300 m) long; 50 ft (15 m) to over 250 ft (75 m) vertical extent; in metamorphosed limestone, dolostone, and marble

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: long\_2

Enumerated\_Domain\_Value\_Definition:

Fissures, tubes, and caves over 1,000 ft (300 m) long; 50 ft (15 m) to over 250 ft (75 m) vertical extent; in moderately to steeply dipping beds of carbonate rock.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: long\_3

Enumerated\_Domain\_Value\_Definition:

Fissures, tubes, and caves over 1,000 ft (300 m) long; 50 ft (15 m) to over 250 ft (75 m) vertical extent; in gently dipping to flat-lying beds of carbonate rock.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: long\_4

Enumerated\_Domain\_Value\_Definition:

Fissures, tubes, and caves over 1,000 ft (300 m) long; 50 ft (15 m) to over 250 ft (75 m) vertical extent; in gently dipping to flat-lying beds of carbonate rock beneath an overburden of noncarbonate material 10 ft (3 m) to 200 ft (60 m) thick.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: long\_5

Enumerated\_Domain\_Value\_Definition:

Fissures, tubes, and caves over 1,000 ft (300 m) long; 50 ft (15 m) to over 250 ft (75 m) vertical extent; in moderately to steeply dipping beds of gypsum.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: long\_6

Enumerated\_Domain\_Value\_Definition:

Fissures, tubes, and caves over 1,000 ft (300 m) long; 50 ft (15 m) to over 250 ft (75 m) vertical extent; in gently dipping to flat-lying beds of gypsum.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: no\_geol

Enumerated\_Domain\_Value\_Definition: The area does not contain karst.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: pseudo\_1

Enumerated\_Domain\_Value\_Definition:

Fissures and voids present to a depth of 250 ft (75 m) or more in areas of subsidence from piping in thick, unconsolidated material.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: pseudo\_2

Enumerated\_Domain\_Value\_Definition:

Fissures and voids present to a depth of 50 ft (15 m) in areas of subsidence from piping in thick, unconsolidated material

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: pseudo\_3

Enumerated\_Domain\_Value\_Definition:

Fissures, tubes, and tunnels present to a depth of 250 ft (75m) or more in lava.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: pseudo\_4

Enumerated\_Domain\_Value\_Definition:

Fissures, tubes, and tunnels present to a depth of 50 ft. (15 m) in lava.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: short\_1

Enumerated\_Domain\_Value\_Definition:

Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in metamorphosed limestone,

dolostone, and marble

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: short\_2

Enumerated\_Domain\_Value\_Definition:

Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in crystalline, highly siliceous, intensely folded carbonate rock.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: short\_3

Enumerated\_Domain\_Value\_Definition:

Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in moderately to steeply dipping beds of carbonate rock.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: short\_4

Enumerated\_Domain\_Value\_Definition:

Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in gently dipping to flat-lying beds of carbonate rock.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: short\_5

Enumerated\_Domain\_Value\_Definition:

Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in gently dipping to flat-lying beds of carbonate rock beneath an overburden of noncarbonate material 10 ft (3 m) to 200 ft (60 m) thick.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: short\_6

Enumerated\_Domain\_Value\_Definition:

Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in moderately to steeply dipping beds of gypsum

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: short\_7

Enumerated\_Domain\_Value\_Definition:

Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in gently dipping to flat-lying beds of gypsum.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: short\_8

Enumerated\_Domain\_Value\_Definition:

Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in gently dipping to flat-lying beds of gypsum beneath an overburden of nongypsiferous material.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: short\_9

Enumerated\_Domain\_Value\_Definition:

Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in carbonate zones in highly calcitic granite. Found in Alaska only.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value: short\_10

Enumerated\_Domain\_Value\_Definition:

Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in moderately to steeply dipping beds of carbonate rock with a thin cover of glacial till and frost derived residual soil. Found in Alaska only.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Attribute:

Attribute\_Label: Descript

Attribute\_Definition: A full description of the karst type.

Attribute\_Definition\_Source: U.S. Geological Survey

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value:

Fissures and voids present to a depth of 250 ft (75 m) or more in areas of subsidence from piping in thick, unconsolidated material

Enumerated\_Domain\_Value\_Definition: Pseudokarst areas as described.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value:

Fissures and voids present to a depth of 50 ft (15 m) in areas of subsidence from piping in thick, unconsolidated material

Enumerated\_Domain\_Value\_Definition: Pseudokarst areas as described.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value:

Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in gently dipping to flat-lying beds of carbonate rock

Enumerated\_Domain\_Value\_Definition: Karst areas as described.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value:

Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in gently dipping to flat-lying beds of carbonate rock beneath an overburden of noncarbonate material 10 ft (3 m) to 200 ft (60 m) thick

Enumerated\_Domain\_Value\_Definition: Karst areas as described.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value:

Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in carbonate zones in highly calcitic granite

Enumerated\_Domain\_Value\_Definition:

Karst areas as described. Found in Alaska only.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value:

Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in crystalline, highly

siliceous, intensely folded carbonate rock  
Enumerated\_Domain\_Value\_Definition: Karst areas as described.  
Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey  
Enumerated\_Domain:  
Enumerated\_Domain\_Value:  
Fissures, tubes and caves generally less than 1,000 ft (300 m) long;  
50 ft (15 m) or less vertical extent; in gently dipping to flat-  
lying beds of gypsum  
Enumerated\_Domain\_Value\_Definition: Karst areas as described.  
Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey  
Enumerated\_Domain:  
Enumerated\_Domain\_Value:  
Fissures, tubes and caves generally less than 1,000 ft (300 m) long;  
50 ft (15 m) or less vertical extent; in gently dipping to flat-  
lying beds of gypsum beneath an overburden of nongypsiferous  
material  
Enumerated\_Domain\_Value\_Definition: Karst areas as described.  
Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey  
Enumerated\_Domain:  
Enumerated\_Domain\_Value:  
Fissures, tubes and caves generally less than 1,000 ft (300 m) long;  
50 ft (15 m) or less vertical extent; in metamorphosed limestone,  
dolostone, and marble  
Enumerated\_Domain\_Value\_Definition: Karst areas as described.  
Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey  
Enumerated\_Domain:  
Enumerated\_Domain\_Value:  
Fissures, tubes and caves generally less than 1,000 ft (300 m) long;  
50 ft (15 m) or less vertical extent; in moderately to steeply  
dipping beds of carbonate rock  
Enumerated\_Domain\_Value\_Definition: Karst areas as described.  
Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey  
Enumerated\_Domain:  
Enumerated\_Domain\_Value:  
Fissures, tubes and caves generally less than 1,000 ft (300 m) long;  
50 ft (15 m) or less vertical extent; in moderately to steeply  
dipping beds of carbonate rock with a thin cover of glacial till and  
frost derived residual soil  
Enumerated\_Domain\_Value\_Definition:  
Karst areas as described. Found in Alaska only.  
Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey  
Enumerated\_Domain:  
Enumerated\_Domain\_Value:  
Fissures, tubes and caves generally less than 1,000 ft (300 m) long;  
50 ft (15 m) or less vertical extent; in moderately to steeply  
dipping beds of gypsum  
Enumerated\_Domain\_Value\_Definition: Karst areas as described.  
Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey  
Enumerated\_Domain:  
Enumerated\_Domain\_Value:  
Fissures, tubes, and caves generally absent; where present in small  
isolated areas, less than 50 ft (15 m) long; less than 50 ft (15 m)  
vertical extent; in crystalline, highly siliceous, intensely folded  
carbonate rock  
Enumerated\_Domain\_Value\_Definition: Karst areas as described.  
Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value:

Fissures, tubes, and caves generally absent; where present in small isolated areas, less than 50 ft (15 m) long; less than 50 ft (15 m) vertical extent; in gently dipping to flat-lying beds of carbonate rock

Enumerated\_Domain\_Value\_Definition: Karst areas as described.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value:

Fissures, tubes, and caves generally absent; where present in small isolated areas, less than 50 ft (15 m) long; less than 50 ft (15 m) vertical extent; in moderately to steeply dipping beds of carbonate rock

Enumerated\_Domain\_Value\_Definition: Karst areas as described.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value:

Fissures, tubes, and caves over 1,000 ft (300 m) long; 50 ft (15 m) to over 250 ft (75 m) vertical extent; in gently dipping to flat-lying beds of carbonate rock

Enumerated\_Domain\_Value\_Definition: Karst areas as described.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value:

Fissures, tubes, and caves over 1,000 ft (300 m) long; 50 ft (15 m) to over 250 ft (75 m) vertical extent; in gently dipping to flat-lying beds of carbonate rock beneath an overburden of noncarbonate material 10 ft (3 m) to 200 ft (60 m) thick

Enumerated\_Domain\_Value\_Definition: Karst areas as described.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value:

Fissures, tubes, and caves over 1,000 ft (300 m) long; 50 ft (15 m) to over 250 ft (75 m) vertical extent; in gently dipping to flat-lying beds of gypsum

Enumerated\_Domain\_Value\_Definition: Karst areas as described.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value:

Fissures, tubes, and caves over 1,000 ft (300 m) long; 50 ft (15 m) to over 250 ft (75 m) vertical extent; in metamorphosed limestone, dolostone, and marble

Enumerated\_Domain\_Value\_Definition: Karst areas as described.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value:

Fissures, tubes, and caves over 1,000 ft (300 m) long; 50 ft (15 m) to over 250 ft (75 m) vertical extent; in moderately to steeply dipping beds of carbonate rock

Enumerated\_Domain\_Value\_Definition: Karst areas as described.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value:

Fissures, tubes, and caves over 1,000 ft (300 m) long; 50 ft (15 m) to over 250 ft (75 m) vertical extent; in moderately to steeply

dipping beds of gypsum

Enumerated\_Domain\_Value\_Definition: Karst areas as described.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Enumerated\_Domain:

Enumerated\_Domain\_Value:

Fissures, tubes, and tunnels present to a depth of 250 ft (75m) or more in lava

Enumerated\_Domain\_Value\_Definition: Pseudokarst areas as described.

Enumerated\_Domain\_Value\_Definition\_Source: Davies and others, 1984

Enumerated\_Domain:

Enumerated\_Domain\_Value:

Fissures, tubes, and tunnels present to a depth of 50 ft. (15 m) in lava

Enumerated\_Domain\_Value\_Definition: Pseudokarst areas as described.

Enumerated\_Domain\_Value\_Definition\_Source: Davies and others, 1984

Enumerated\_Domain:

Enumerated\_Domain\_Value: no karst

Enumerated\_Domain\_Value\_Definition: The area does not contain karst.

Enumerated\_Domain\_Value\_Definition\_Source: U.S. Geological Survey

Detailed\_Description:

Entity\_Type:

Entity\_Type\_Label:

Extent of extensive historical subsidence (described by karst01075.dbf)

Entity\_Type\_Definition:

The limits of areas of extensive historical surface subsidence (sinkhole development). Subsidence may be caused by alteration of ground-water conditions due to excessive pumping or diversion of surface drainage.

Entity\_Type\_Definition\_Source: U.S. geological Survey

Attribute:

Attribute\_Label: Shape

Attribute\_Definition: The representation of the entity in the data.

Attribute\_Definition\_Source: National Atlas of the United States

Attribute\_Domain\_Values:

Enumerated\_Domain:

Enumerated\_Domain\_Value: PolyLine

Enumerated\_Domain\_Value\_Definition:

1-dimensional element that may or may not surround a 2-dimensional element.

Enumerated\_Domain\_Value\_Definition\_Source: ESRI GIS software

Attribute:

Attribute\_Label: Length

Attribute\_Definition:

The length of the line in coverage units. In the distributed file, coverage units represent decimal degrees.

Attribute\_Definition\_Source: National Atlas of the United States

Attribute\_Domain\_Values:

Range\_Domain:

Range\_Domain\_Minimum: 0.54804

Range\_Domain\_Maximum: 11.66906

Attribute:

Attribute\_Label: Karst01075

Attribute\_Definition: Internal feature number.

Attribute\_Definition\_Source: National Atlas of the United States

Attribute\_Domain\_Values:

Range\_Domain:

Range\_Domain\_Minimum: 1

Range\_Domain\_Maximum: 14

Attribute:

Attribute\_Label: Objectid

Attribute\_Definition: Internal identification number.

Attribute\_Definition\_Source: U.S. Geological Survey

Attribute\_Domain\_Values:

Range\_Domain:

Range\_Domain\_Minimum: 1

Range\_Domain\_Maximum: 14

Distribution\_Information:

Distributor:

Contact\_Information:

Contact\_Organization\_Primary:

Contact\_Organization:

Earth Science Information Center, U.S. Geological Survey

Contact\_Address:

Address\_Type: Mailing address

Address: 507 National Center

City: Reston

State\_or\_Province: VA

Postal\_Code: 20192

Contact\_Voice\_Telephone: 1-888-ASK-USGS (1-888-275-8747)

Contact\_Voice\_Telephone: 703-648-5920

Contact\_Instructions:

In addition to the address above there are other ESIC offices throughout the country. A full list of these offices is at

<[http://geography.usgs.gov/esic/esic\\_index.html](http://geography.usgs.gov/esic/esic_index.html)>.

Distribution\_Liability:

Although these data have been processed successfully on a computer system at the U.S. Geological Survey, no warranty expressed or implied is made by the U.S. Geological Survey regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. No responsibility is assumed by the U.S. Geological Survey in the use of these data.

Standard\_Order\_Process:

Digital\_Form:

Digital\_Transfer\_Information:

Format\_Name: ESRI Shapefile

Digital\_Transfer\_Option:

Online\_Option:

Computer\_Contact\_Information:

Network\_Address:

Network\_Resource\_Name: <<http://nationalatlas.gov/atlasftp.html>>

Digital\_Form:

Digital\_Transfer\_Information:

Format\_Name: SDTS

Digital\_Transfer\_Option:

Online\_Option:

Computer\_Contact\_Information:

Network\_Address:

Network\_Resource\_Name: <<http://nationalatlas.gov/atlasftp.html>>

Fees:

There is no charge for the map layers.

Metadata\_Reference\_Information:

Metadata\_Date: 20050422

Metadata\_Contact:

Contact\_Information:

Contact\_Person\_Primary:

Contact\_Person: Peg Rawson

Contact\_Organization: National Atlas of the United States

Contact\_Address:

Address\_Type: Mailing address

Address: 12201 Sunrise Valley Drive

Address: MS-561

City: Reston

State\_or\_Province: VA

Postal\_Code: 20192

Contact\_Voice\_Telephone: 703-648-4183

Contact\_Electronic\_Mail\_Address: atlasmail@usgs.gov

Metadata\_Standard\_Name: FGDC Content Standards for Digital Geospatial Metadata

Metadata\_Standard\_Version: FGDC-STD-001-1998

Metadata\_Security\_Information:

Metadata\_Security\_Classification\_System: None

Metadata\_Security\_Classification: Unclassified

Metadata\_Security\_Handling\_Description: None